

AMENDMENTS TO THE CLAIMS

1. (Original) A broadband Internet node comprising:
a classify engine interfaced with the Internet, the classify engine operable to accept packets from the Internet and determine classification information for each packet;
a modify/process engine interfaced with the classify engine, the modify/process engine having plural ports, each port having an associated function;
a controller interfaced with the classify engine and the modify/process engine, the controller programming the classify engine to route each packet to a predetermined port of the modify/process engine based on the classification information of the packet.
2. (Original) The node of Claim 1 wherein the modify/process engine further comprises:
a processor blade interface in communication with the classify engine;
a processor blade bus in communication with the processor blade interface, the processor blade bus having plural ports; and
one or more processor blades, each processor blade in communication with a processor blade bus port, each processor blade having an associated function for operating on packets having predetermined classification information.
3. (Currently Amended) The node of Claim 2 wherein one of the processor blade blades comprises and an audio mixer having a function that mixes voice over Internet packets to support conference calls.
4. (Original) The node of Claim 2 wherein one of the processor blades comprises a processor having a function that encrypts packets.
5. (Original) The node of Claim 2 wherein one of the processor blades comprises a processor having a function that filters packet content.

6. (Original) The node of Claim 2 wherein one of the processor blades comprises a processor having a function that searches packet content.

7. (Currently Amended) The node of Claim 1 wherein the controller programs the classifier classify engine with a dataflow program that determines classification information for the packets.

8. (Original) The node of Claim 7 wherein the classify engine is further operable to detect packets associated with a new TCP connection and the controller is further operable to program the classify engine with a new dataflow program that creates a new queue for the new TCP connection.

9. (Currently Amended) The node of Claim 8 A broadband Internet node comprising:

a classify engine interfaced with the Internet, the classify engine operable to accept packets from the Internet and determine classification information for each packet, wherein the classify engine detects is operable to detect a SYN packet associated with the a new TCP connection;

a modify/process engine interfaced with the classify engine, the modify/process engine having plural ports, each port having an associated function; and
a controller interfaced with the classify engine and the modify/process engine, the controller programming the classify engine to route each packet to a predetermined port of the modify/process engine based on the classification information of the packet;

wherein the controller programs the classify engine with a and the new dataflow program that determines classification information for the packets and detects the host/port quadruple of the new TCP connection and creates a new queue for the new TCP connection.

10. (Currently Amended) The node of Claim 7 9 wherein the classify engine is further operable to detect packets associated with an FTP data stream and the controller is further operable to program the classify engine with a new dataflow program that classifies the FTP data stream according to the host/port quadruple of the FTP connection.

11. (Currently Amended) The node of Claim 7 9 wherein the classify engine is further operable to monitor DHCP requests and responses to extract MAC and IP address mapping, and the controller is further operable to program the classify engine with rules to control traffic with IP address information.

12. (Currently Amended) The node of Claim 7 9 wherein the classify engine is further operable to monitor DNS requests and responses to associate traffic with an IP address and the controller is further operable to program the classify engine with rules to control traffic with IP address information.

13. (Original) The node of Claim 7 wherein the dataflow program comprises instruction to program an additional dataflow program.

14. (Original) A system for processing packets in a best effort network, the system comprising:

a processor blade interface operable to accept packets having classification information;
a processor blade bus in communication with the processor blade interface, the processor blade bus having plural ports; and
one or more processor blades, each processor blade in communication with a processor blade port and having a function associated with a predetermined classification information.

15. (Currently Amended) The system of Claim 14 wherein one of the processor blade blades comprises an audio mixer operable to mix plural voice over internet packet flows to establish a conference call.

16. (Currently Amended) The system of Claim 14 wherein the process processor blade comprises a processor programmed to encrypt packets.

17. (Currently Amended) The system of Claim 14 wherein the processing processor blade comprises a processor programmed to determine packet content.

18. (Original) The system of Claim 14 wherein the best efforts network comprises an Internet service provider Intranet.

19. (Currently Amended) A method for routing Internet packets, the method comprising:

classifying the packets into one or more packet flows according to classification rules; routing each packet flow to a predetermined port of a processor, each port having an associated function, so that the packets flow through the processor as a data path;
and

using a dataflow program to program programming the classification rules and functions through a control path that looks across packet flows of the data path.

20. (Original) The method of Claim 19 further comprising:
interfacing a processor blade with the data path, the processor blade having an associated function; and
routing a packet flow to the processor blade, the packet flow having a classification associated with the function of the processor blade.

21. (Cancelled)

22. (Currently Amended) ~~The method of Claim 21~~ A method for routing Internet packets, the method comprising:

classifying the packets into one or more packet flows according to classification rules;
routing each packet flow to a predetermined port of a processor, each port having an associated function, so that the packets flow through the processor as a data path;
programming the classification rules and functions through a control path that looks across packet flows of the data path;
detecting a new packet type; and
performing reflective programming on a dataflow program to classify the new packet type;

wherein the new packet type comprises a new TCP connection, detecting comprises detecting a SYN packet associated with the new TCP connection, and performing reflective programming comprises programming a dataflow program that classifies the host/port quadruple of the new TCP connection.

23. (Withdrawn) A method for providing a service on a packet- based network, the method comprising:

monitoring network traffic with a processor to detect control protocol information;
extracting control protocol information from the network traffic;
using reflective programming to create a new dataflow program for monitoring packets associated with at least some of the extracted control protocol information; and
monitoring the network traffic with the new dataflow program.

24. (Withdrawn) The method of Claim 23 wherein the processor comprises a network processor.

25. (Withdrawn) The method of Claim 23 wherein monitoring network traffic further comprises:

monitoring network traffic with a processor running a dataflow program to detect control protocol information.

26. (Withdrawn) The method of Claim 23 wherein monitoring network traffic comprises:

monitoring network traffic with a processor running a rules-based program to detect control protocol information.

27. (Withdrawn) The method of Claim 23 wherein the control protocol information comprises host and port information from network traffic associated with an FTP data.

28. (Withdrawn) The method of Claim 27 wherein the new dataflow program comprises a host/port quadruple associated with the FTP data.

29. (Withdrawn) The method of Claim 27 wherein the new dataflow program associates the FTP data with a class of service.

30. (Withdrawn) The method of Claim 23 wherein the control protocol information comprises DHCP requests and responses from network traffic associated with a dynamically assigned IP address.

31. (Withdrawn) The method of Claim 30 wherein the new dataflow program comprises rules based on IP addresses extracted from MAC IP mapping.

32. (Withdrawn) The method of Claim 23 wherein the control protocol information comprises DNS requests and responses from network traffic associated with mapping of an Internet host name and an IP address.

33. (Withdrawn) The method of Claim 32 wherein the new dataflow program processes traffic associated with the Internet host name.

34. (Withdrawn) The method of Claim 23 wherein the control protocol information comprises a lookup request to a first server for the IP address and port number of a second server having predetermined information.

35. (Withdrawn) The method of Claim 34 wherein the new dataflow program comprises instructions to create another dataflow program.